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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/054,259	01/22/2002	Ronald M. Kubacki	02-103	7049

24026 7590 09/12/2003

PHILIP O POST  
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CHERRY HILL, NJ 08002

EXAMINER

BARRECA, NICOLE M

ART UNIT PAPER NUMBER

1756

DATE MAILED: 09/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/054,259

Applicant(s)

KUBACKI, RONALD M.

Examiner

Nicole M. Barreca

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 and 19-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 19-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. Claims 1-15 and 19-23 (directed Group I) are pending in this application.

#### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Endo (US 4,532,150).
4. Endo discloses an amorphous coating layer of silicon carbide on an electronic substrate. The substrate is subjected to a plasma atmosphere of an organosilane or polyorganosilane compounds represented by the general formula  $R_{2n+2}Si_n$ , where R may be a hydrogen atom and  $n=1-4$  (monosilane or disilane when  $n=1$  or 2). The vapor or gas of the organosilane is mixed with a vapor or gas of a hydrocarbon compound, such as methane, ethane, ethylene or toluene (col.8, 18-44).
5. Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamamoto (US 4,711,807).
6. Yamamoto discloses an insulating material comprising a silicon compound used in various electronic fields. The insulating material is prepared by forming a film on a substrate from reactive gases by means of plasma CVD. Examples of the reactive gases are mixed gases of compounds including silicon and other gases. Examples of

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gases including silicon include SiH<sub>4</sub> and Si<sub>2</sub>H<sub>6</sub>. Examples of other gases include hydrocarbons such as CH<sub>4</sub>, C<sub>2</sub>H<sub>4</sub> and C<sub>2</sub>H<sub>6</sub> (col.2, 28-66).

7. Claims 1-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Lee (US 5,893,731).

8. Lee teaches that conventionally a resistor comprises a first conductor layer, a capacitor dielectric layer and a second conductor layer (col.2, 9-15).

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 14, 15 and 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Kobayashi (US 5,550,520).

11. The teachings of Lee have been discussed previously. Lee does not disclose that capacitors are connected to inductors for use in an electric filter, or that one or more of the inductors comprise an on-chip spiral inductor. Kobayashi teaches that conventional filters typically include spiral inductors, capacitors and resistors (col.1, 30-46). Kobayashi also teaches that generally the filter structure includes capacitors C1, C2, C3 and C4 connected to spiral inductor L1 (col.3, 43-57). It would have been obvious to one of ordinary skill in the art to have the capacitor of Lee connected to a spiral inductor for use in an electrical filter because Kobayashi teaches that a conventional filter include capacitors connected to spiral inductors.

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12. Claims 7-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Endo or Yamamoto in view of Lee (US 5,893,731).

13. The teachings of Endo and Yamamoto have been discussed previously. Endo and Yamamoto each teach a dielectric film on a substrate (formed from a two-component plasma reaction of a non-carbon containing and non-oxygenated silicon donor and a non-silicon containing and non-oxygenated organic precursor) for use in the manufacture of a semiconductor device. Endo and Yamamoto are silent on the specific electronic device being manufactured and do not disclose that the insulating or dielectric film is formed between conductor layers for use in a semiconductor device, such as a capacitor. Lee teaches that conventionally a resistor comprises a first conductor layer, a capacitor dielectric layer and a second conductor layer (col.2, 9-15). It would have been obvious to one of ordinary skill in the art to use the dielectric layer in Endo or Yamamoto between a first and a second conductor layer for use in a capacitor because Lee teaches that this is the structure of a conventional capacitor.

14. Claims 14 and 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Endo or Yamamoto in view of Lee and Kobayashi.

15. The teachings of Endo and Yamamoto have been discussed previously. Endo and Yamamoto each teach a dielectric film on a substrate (formed from a two-component plasma reaction of a non-carbon containing and non-oxygenated silicon donor and a non-silicon containing and non-oxygenated organic precursor) for use in the manufacture of a semiconductor device. Endo and Yamamoto are silent on the specific electronic device being manufactured and do not disclose that the insulating or

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dielectric film is formed between conductor layers for use in a semiconductor device, such as a capacitor and that the capacitors are connected to (spiral) inductors for use in an electric filter. Lee teaches that conventionally a resistor comprises a first conductor layer, a capacitor dielectric layer and a second conductor layer (col.2, 9-15). Kobayashi teaches that conventional filters typically include spiral inductors, capacitors and resistors (col.1, 30-46). Kobayashi also teaches that generally the filter structure includes capacitors C1, C2, C3 and C4 connected to spiral inductor L1 (col.3, 43-57). It would have been obvious to one of ordinary skill in the art to use the dielectric layer in Endo or Yamamoto between a first and a second conductor layer for use in a capacitor and to connect this capacitor to spiral inductors for use in an electrical filter because Lee teaches that the structure of a conventional capacitor includes a capacitor dielectric layer between first and second conductor layers and Kobayashi teaches that capacitors are connected to spiral inductors in a conventional electrical filter.

16. Please note that all pending claims are directed to a product. The claim limitations reciting how the product is formed, such as that the dielectric is photo-oxidized by exposure to radiation in the presence of oxygen to alter the dielectric constant (cl.6, 12,13, 21), are process limitations which do not limit the structure of the product. Also please note that while Endo and Yamamoto both do teach how the dielectric material is formed (i.e. from a two-component plasma reaction of a non-carbon containing and non-oxygenated silicon donor and a non-silicon containing and non-oxygenated organic precursor), this recitation is also a process limitation. See MPEP 2113.

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***Conclusion***

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicole M. Barreca whose telephone number is 703-308-7968. The examiner can normally be reached on Monday-Thursday (8:00 am-6:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 703-308-2464. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Nicole Barreca  
Patent Examiner  
Art Unit 1756

9/8/03